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ABSTRACT

A review of 35 reports evaluating 27 two-way bilingual education programs is reported. All programs represented meet basic criteria for language of instruction, student characteristics, and emphasis on developing bilingualism. The review examined program characteristics and student outcomes, when available. Results are summarized in the following areas: language proficiency in Spanish, English, Chinese, and Portuguese language proficiency; Spanish and English reading achievement; Spanish and English writing achievement; Spanish and English math achievement; Spanish and English science achievement; Spanish and English social studies achievement; additional content-area results; student self-perception and language/cross-cultural attitudes; staff development activities; parent involvement activities; and teaching methodologies and classroom strategies. Contains five references. (MSE)

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A REVIEW OF FINDINGS FROM TWO-WAY BILINGUAL EDUCATION EVALUATION REPORTS

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Center for Applied Linguistics

National Center for Research on Cultural Diversity
and Second Language Learning

December 1993

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Abbreviations: Tests Cited

Aprenda	Aprenda: La Prueba de Logros en Español
BINL	Basic Inventory of Natural Language
BSM	Bilingual Syntax Measure
CAS²	California Assessment Program
CAT	California Achievement Test
COPE	CAL Oral Proficiency Exam
CTBS	Comprehensive Test of Basic Skills
DRP	Degrees of Reading Power
IDEA	IDEA Oral Language Proficiency Test
IGAP	Illinois Goal Assessment Program
ITAS	Individual Test of Academic Skills
ITBS	Iowa Test of Basic Skills
LAB	Language Assessment Battery
LAS	Language Assessment Scales
La Prueba	La Prueba Riverside de Realización Español
MAT	Metropolitan Achievement Test
PEP	Pupil Evaluation Program
Pre-LAS	Pre-Language Assessment Scales
SABE	Spanish Assessment of Basic Education
SOLOM	Student Oral Language Observation Matrix
SOPR	Student Oral Proficiency Rating Scale
SRA	Science Research Associates
3 R's Test	3 R's Test (Language, Reading, Mathematics)
TOBE	Test of Basic English

DRAFT

A Review of Findings from

Two-way Bilingual Education Evaluation Reports[1]

Cindy Mahrer and Donna Christian

Introduction

Two-way bilingual education has gained attention in recent years as an effective approach to educating language minority and majority students. In these programs, students learn together through two languages in programs that aim to develop dual language proficiency along with academic achievement. Ideally, half the students in a class share a particular non-English language background (most often Spanish) and they have the opportunity to develop their native language, learn English and progress academically. Their English-background classmates learn a second language along with academic content.

Because they represent innovative program designs, many of the two-way bilingual programs have had evaluation studies done to document program results and/or to recommend areas for improvement. These studies have, for the most part, remained individual, in-house documents[2]. In this report, we attempt to consolidate the findings from a number of these

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[1] We are grateful to the evaluators and two-way bilingual program staff who provided us with the evaluation reports on which this study is based. Since we are attempting to maintain the anonymity of individual programs, we cannot thank them by name, but this study would not have been possible without them. We also benefitted from comments by G. Richard Tucker on an earlier draft, as well as numerous discussions with him about the study in general, and we appreciate his thoughtful suggestions.

[2] There are some compilations of multiple program results available, such as Lindholm's work (1992, 1993) which reports the outcomes of nine developmental bilingual project sites in California and Collier (1992) who synthesizes academic achievement among language minority students in several different types of programs.

reports, to take a beginning look at the outcomes of two-way bilingual programs on a broader basis.

Background

In Christian and Mahrer (1992, 1993), profiles were compiled for two-way bilingual programs in operation during the 1991-1992 and 1992-1993 academic years. A total of 156 schools in 17 states were documented, using information provided by the schools. One of the areas investigated was evaluation, and information was requested on the nature of any evaluation activities related to the program.

In order to take a broader look at evaluation results, we contacted each program evaluator listed in the profiles and asked for a copy of any reports on the program that were available. We received 61 evaluation reports in total from 41 programs (nine of the programs have been evaluated annually and sent reports from two or more years).

After a careful review, 35 of the 61 reports (representing 27 different programs) were included in the compilation. In order to establish a baseline for program comparison, it was decided to include only programs that meet several basic criteria: instruction is provided through and in the non-English language at least 50% of the time; students from the two language backgrounds are represented about equally in classes and are integrated for most of their academic instruction; and the program seeks to develop bilingualism (i.e., it is not a transitional program for the students who enter with limited proficiency in English). These criteria reflect a common design for two-way bilingual education and provide a reasonable basis for comparison of results in areas of language proficiency and academic achievement.

In addition, reports were included only if they provided information about a two-way program in one of the categories listed below.

The 35 evaluation reports that are included in this compilation vary widely in the information presented. They cover 27 different programs, with 8 of the programs supplying reports for more than one year. Student outcomes from the most recent evaluation reports were used for the cross-program tabulations in this report when multiple year evaluations were available. Relevant information from previous evaluations was included in the discussion, however, where appropriate. Several programs encompassed more than one school site. Twenty-three of the 35 reports provided data on student outcomes, but not all in the same categories. Four of the reports provided information from the program's first planning year only and therefore do not discuss student outcomes. In those cases, this report includes only information on staff development and/or parent involvement. The results from the programs are compiled according to the following categories:

- Spanish language proficiency;
- English language proficiency;
- Chinese language proficiency;
- Portuguese language proficiency;
- Spanish reading achievement;
- English reading achievement;
- Spanish writing achievement;
- English writing achievement;
- Spanish math achievement;
- English math achievement;
- Spanish science and social studies;
- English science and social studies;
- Additional content area results;
- Self-perception and cross-cultural/language attitudes;
- Staff development;
- Parent involvement; and
- Teaching methodologies and classroom strategies.

The student outcomes are reported separately for students who came from the target language background and were limited English proficient (LEP) when they entered the program and those who were English proficient (EP). Programs did not necessarily provide information in all categories for both groups. In some categories, programs reported for only one group of students (LEP or EP). In other cases, programs presented information for select grade levels even though they served students in other grades, for several reasons: some assessment instruments apply only at certain grade levels; the sample size of students was too small at some grade levels to analyze statistically; or programs did not have access to appropriate assessment measures.

As might be expected, programs presented evaluation findings in a variety of formats. Assessment instruments and measures also varied widely from program to program. In general, programs documented results in terms of overall posttest gains or declines per grade level; the percent of individual students who improved their posttest scores, grade level norms or percentile ratings; and the performance of comparison groups. At times, programs used a combination of these measures to demonstrate student outcomes. Some programs also used more than one instrument to measure student progress in different grade levels and, in some cases, within the same grade level.

The majority of programs recorded posttest gains and declines. In many cases, the pretest results came from the end of the prior academic year. These were compared with the end-of-year assessments done in the year of the evaluation. Increases in posttest scores indicated that students maintained or improved their skills or proficiency level. Statistically significant posttest gains indicated that students made exceptional progress. A decline in scores was interpreted in different ways and did not necessarily mean that students suffered a

loss in skills or proficiency, particularly if the declines were not statistically significant. Moreover, since declines were not related to absolute performance, skill levels might be high. Likewise, although a gain in scores indicated increased achievement, it did not necessarily signify that students were performing at grade level.

Programs primarily reported posttest gains and declines as an average for each grade level. In some programs, posttest gains were reported as an aggregate average across all grade levels. Grade level and percentile ratings were also presented in grade or class averages.

Most programs used the terms LEP (limited English proficient) and EP (English proficient) to define their student populations. In the interest of consistency, the terms LEP and EP are also used in this report, although they may not adequately capture the characteristics and language proficiency ranges of students in the programs. In particular, since one program goal is to develop bilingual proficiency, most students do not remain LEP beyond the first few years of participation. Thus, the terms are not used descriptively; they are generally meant to distinguish those students who are Spanish (or Chinese or Portuguese) dominant (LEP) when they enter the program and those students who are English dominant (EP). Some schools presented data for both groups of students and some for only one group of students for different assessment categories.

Although it is beyond the scope of this synthesis to determine how variation in program design impacted student outcomes, it is important to briefly note at least the range of models for language distribution. Some programs provided instruction in two languages in equal proportions, but divided the proportions in different ways such as by subject matter, alternate days, alternate weeks, or alternate teachers. Other programs initially provided

Spanish or other target language instruction for 90% of the time to both groups of students, gradually adding English so that by the 4th or 5th grade, the amount of instruction in both languages was equal. Thus, although all programs use the target language at least half the time, the variation in models is extensive.

Each of the following sections outlines the progress of LEP and EP students according to the kinds of evaluation data provided by the programs for that category. Our intent is to depict the overall trends across programs, in response to such questions as: Did students make gains over the year(s) in academic subjects and language proficiency? Did they perform at or above grade level? How did their academic performance compare to other groups of students?

Spanish language proficiency

Sixteen programs reported data for progress in Spanish language proficiency. Of the 16 schools, ten reported data for LEP students and 15 reported data for EP students. The majority of programs reported results based on pre- and posttest scores from language proficiency assessment instruments. In several cases, students maintained their proficiency levels despite a slight decrease in scores. In other instances, if both pre- and posttest scores were very high, a posttest decline was not interpreted as negative.

Programs primarily reported posttest gains as an average for each grade level. In some programs, posttest gains were reported as an aggregate average across grade levels. In a few cases, gains were reflected in the percentage of individual students who demonstrated increased scores.

Progress of LEP students

Instruments measuring Spanish language proficiency included the LAB, LAS, BSM, TOBE, IDEA, SOPR, COPE, and SOLOM. Results from eight of the ten programs are summarized in Table 1 for each grade level reported. Data from other programs are included in the discussion below. A plus sign (+) indicates students made gains or maintained their skill level, an asterisk (*) indicates significant gains, a minus sign (-) indicates that students showed a decrease in posttest scores, and an equals sign (=) indicates a significant decline in scores.

Table 1. Gains in Spanish Language Proficiency by LEP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
*	*	*		*		*						
+ +	+ +	+ +	+ +	+ +	+ +	+	+	+				
+ +	+ +	+	+		+ +							
	-	=	-									

* significant gain + gain/maintenance - decline = significant decline

Overall, across all grade levels and programs, LEP students maintained or increased their native Spanish language skills. Statistically significant gains occurred at one program in grades 4 and 6 and in another program (two sites) in grades K-2. At one site, students in grades K-5 maintained their proficiency level, but did not make gains in their posttest scores. However, the evaluator noted that there were limitations in the evaluation instrument used to measure language growth.

The declines shown in Table 1 represent one program with multiple sites. Students in grades 1 and 3 showed non-significant declines, while at grade 2, students showed a significant decline in scores. Although they experienced a decline, however, both pre- and

posttest scores on the SOLOM (a teacher judgment rating) indicated high levels of Spanish proficiency.

The reports document other results related to Spanish language proficiency. In one program, LEP students who had been in the program for two years scored higher on the LAS than did students who had been in the program for one year. In another program serving students in grades 6-12, all students but one (both LEP and EP) were rated as fluent in Spanish. Results from the SOPR instrument in one program serving students in grades K-5 indicated that overall, students improved their skill level as they progressed through the program, evidenced by the fact that in the upper grade levels there were more scores at the higher end of the assessment scale.

Progress of EP students

Instruments measuring Spanish language proficiency included the LAB, BINL, SOLOM, BSM, IDEA, LAS-O, SOPR, COPE, and SABE. Students were also measured by teacher evaluation. Results from 13 of the 15 programs are summarized in Table 2 for each grade level reported. Data from the other programs are included in the discussion below.

Table 2. Gains in Spanish Language Proficiency by EP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
* *	* *	* *	*	*	*		*					
	*	*										
+ +	+ +	+ +	+ +	+ +	+ +	+ +				+		
+	+ +	+ +	+ +	+ +								
	+ +	+ +	+ +									
			+									
- -	-	-		-		-		-				

* significant gain + gain/maintenance - decline = significant decline

Overall, across all grade levels and programs, EP students increased their second language proficiency in Spanish. Statistically significant gains occurred in kindergarten, 1st, 2nd, 3rd, 4th, 5th, and 7th grades in six programs. At one site, students in grades K-5 maintained their proficiency level, but did not make gains in their posttest scores. However, the evaluator noted that there were limitations in the evaluation instrument used to measure language growth.

A decline in posttest scores occurred in two programs in the following grade levels: K and K-2, 4, 6, and 8. However, in one of the programs, the small sample size of students may have skewed the scores.

Results from the SOPR instrument in one program serving students in grades K-5 indicated that overall, as in previous years, students improved their skill level as they progressed in the program evidenced by the fact that in the upper grade levels there were more scores at the higher end of the scale. In another program serving the upper grade levels, almost half of the 6th and 7th graders were rated as fluent in Spanish.

In one program, students in grades 1-2 made statistically significant gains one year, while in the following academic year, grade 2 students made non-significant gains and grade 3 students made statistically significant gains. In another program, K-1 students did not make gains, but grade 2 students did. In the second year of this program, students in grades K-3 made statistically significant gains, except at grade 2. And in the third year of the program, students in grades K, 1, and 4 made statistically significant gains, while students in grades 2 and 3 gained but at non-significant levels.

English language proficiency

Eighteen programs provided evaluation data for English language proficiency. 17 programs reported results for LEP students and nine reported results for EP students. One program gave combined LEP/EP test results, noting that all students in grades K-3 were at or above grade level on a Minimum Basic Skills test. The majority of programs reported results based on pre- and posttest scores from language proficiency assessment instruments. In several cases, students maintained their proficiency levels despite a slight decrease in scores. In other instances, if both pre- and posttest scores were very high, a posttest decline was not interpreted as negative.

Programs primarily reported posttest gains as an average for each grade level. In some programs, posttest gains were reported as an aggregate average across grade levels. In several cases, gains in English proficiency were reflected in the percent of individual students who demonstrated increased scores. In one program, students were assessed by determining whether they performed at or above grade level. In another program, students' change in posttest scores were evaluated against a comparison group.

Progress of LEP students

Instruments measuring English language proficiency included the LAB, CTBS, BINL, SOLOM, BSM, IDEA, LAS-O, and MAT. Results from 14 of the 18 programs that documented posttest gains and declines are summarized in Table 3 for each grade level reported. Results from other programs are included in the discussion below.

Table 3. Gains in English Language Proficiency by LEP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
* * * * + + +	* * * + + + + + + - -	* * * * + + + + + -	* * * + + + - -	+ + + + -	+ + + +	* + + +	* + +	+ =		+	+	+

* significant gain + gain/maintenance - decline = significant decline

Overall, across all grade levels and programs, LEP students increased their second language proficiency in English despite the fact that in many programs these students were only exposed to English from 10 to 50 percent of the time. Statistically significant gains occurred in kindergarten, 1st, 2nd, 3rd, 6th, and 7th grades in seven programs. First graders in one program showed slight posttest declines but maintained their level of proficiency. Similarly, students in grades K-5 in another program maintained their level of proficiency, but did not make gains. However, the evaluator noted that the particular instrument used to measure language proficiency has limitations.

In one program, the percent of LEP students rated as English proficient increased from 28.2% in kindergarten to 95.5% in 6th grade. In another, progress was not measured by gains from one year to the next, but by the fact that students outperformed a comparison group of LEP students in a transitional bilingual education program. However, this group of students still performed below grade level. An elementary program (K-5) found that third grade LEP students scored 81% on the LAS-O.

At the secondary level, one program reported that, among students that entered the program as LEP, 90% of the 6th graders, 65% of the 7th graders, 53% of the 9th graders, and 40% of the 10th graders were rated as English proficient. In another program, only 28.6% of

6th graders and 11% of 7th graders met program objectives for gains (10 NCEs on the LAB). Although we do not have figures for new entrants at the upper grades, secondary programs often enroll new students in programs who are LEP; this factor might account for the lower rate of English proficiency for the LEP category students at the higher grade levels.

In one program that has documented three years of implementation, students in grades K-2 made gains in English proficiency the first year; kindergarten students showed a slight decline and students in grades 1-3 made statistically significant gains in the second year; and students in grades K-2 made gains, while students in grades 3-4 showed non-significant declines in the third year of the program. In another program, students in grades 1-2 in the first year, and students in grades 1-3 in the second year made statistically significant gains.

Progress of EP students

Instruments measuring English language proficiency for EP students included the LAB, CTBS, BINL, SRA, DRP, LAS-O, IDEA, and SOLOM. Programs presented results in a variety of ways: students were rated on their fluency only, on their posttest gain only, on their fluency and posttest gain combined, in comparison to another group, and on grade level performance. Results from six of the nine programs that documented posttest gains and declines are summarized in Table 4 for each grade level reported. Other results are discussed below.

Table 4. Gains in English Language Proficiency by EP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
* * + +	* + + + -	* + + -	* + + - -	* + +	* +	+ 						

* significant gain + gain/maintenance - decline = significant decline

Overall, across grade levels and programs, the majority of EP students were rated fluent in English and continued to make gains in English language proficiency, despite the fact that only between 10 and 50 percent of the instructional time was spent in English. Statistically significant gains occurred in kindergarten and 1st, 2nd, 3rd, 4th, and 5th grades in two programs. Although students in grades 1-3 in one program showed non-significant declines, they scored near the top of the SOLOM rating scale, indicating good proficiency in English.

In one program, students did not gain as much as the comparison group of EP students in the same school. However, these students spent a significant portion of their instructional time in Spanish. In another program serving grades 6-12, all students except one or two students in 7th and 10th grades were rated fluent in English. In an elementary program (K-5), third grade students scored 85% on the LAS-O.

In a report from an earlier year, results from a secondary program indicated that 83.3 percent of its grade 9-12 students scored higher on the LAB posttest than on the pretest, with 33.3 percent making gains on the listening/speaking subtest.

Chinese language proficiency

One Chinese/English dual language program provided evaluation data for kindergarten students. Thirty-six percent of these students were determined to be dual language proficient, meaning they attained a score of 24 in both English and Chinese on a checklist. Although the program's objective was to have 90 percent of the students gain dual language proficiency, this may have been an unrealistic goal because of the young age of the students and their limited time in the program.

Portuguese language proficiency

One dual language program presented data on Portuguese language proficiency for LEP and EP students in the program. According to the report, 72% of LEP students in K-3 achieved proficiency and 75% of EP students in K-3 achieved a score of 10 or higher on the SOLOM.

Spanish reading achievement

Seventeen programs reported data for Spanish reading achievement. All 17 programs reported results for LEP students and 15 reported results for EP students. Programs presented results in a variety of ways. The majority of programs documented posttest gains or declines. Other programs reported students' percentile scores, grade level performance, or a combination of these and posttest results. A few programs determined if there was an increase in the number of students who scored higher on the posttest. Results were presented as averages per grade level or across grade levels.

Progress of LEP students

Instruments measuring Spanish reading achievement for LEP students included the SABE, LAB, Aprenda, LAS, Pre-LAS, and La Prueba. Students achievement was also measured by teacher assessment. Results from 13 programs that documented posttest gains and declines are summarized in Table 5 for each grade level reported. Results from other programs are included in the discussion below. The slash between the symbols on the table signifies that results from two different tests were reported for students at that grade level.

Table 5. Gains in Spanish Reading Achievement by LEP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
*	*	* * * *	* * * * *	* *	* *	*/* *	*/= *	*				
+ + +	+ + + + + + =	+ + + + + +	+	+ + +	+	+	+			+	+	+

* significant gain + gain/maintenance - decline = significant decline

Overall, across all grade levels and programs, LEP students made excellent progress in Spanish reading achievement. Posttest gains were statistically significant in grades K-8 in nine programs. Non-significant declines occurred in grades 3 and 6 in two programs and significant declines occurred in grades 1 and 7 in two programs.

In one program, students in grades 1-2 outperformed a comparison group of LEP students in a transitional bilingual education program. In another program, there were no differences in the scores between students in grades 1-3 and a comparison group of LEP students in the same grades. There was an increase in the number of K-2 students in another program who scored above the 50th percentile, although their scores were at low percentile levels. In one program serving students in grades 1-8, pretest results showed that students performed well on the test.

Despite the fact that students overall demonstrated gains, however, many still performed below grade level. One evaluator noted that this is a concern since Spanish reading skills form the foundation for LEP students as they begin reading in English. Six programs reported results in terms of grade level performance. In one program, 6th graders posttested almost at grade level on one test and slightly below grade level on another test. In

the same program, 7th graders posttested slightly above grade level on one test and below grade level on the other test. .Three other programs indicated that students in grades K-2, 1-5, and K-6 performed below grade level. In a fifth program serving grades 6-12, only seven to fifteen percent of students performed at or above grade level. The sixth program reported that 3rd grade students averaged 89% in their reading and students in grades 4-5 averaged a 'B'. Students in the same grade levels from the same program performed similarly in two previous years.

In one program with evaluations for several years, first year results showed that students in grades K-1 made gains, but 2nd graders did not. In the second year, 1st graders made statistically significant gains while 2nd and 3rd graders showed declines. In the third year, all students in grades K-4 made gains and they were statistically significant in grades K and 3. In another program, 2nd graders made statistically significant gains the first year and in the second year, 2nd graders made non-significant gains. In a high school program, students in grades 9-12 made gains two years in a row.

Progress of EP students

Instruments measuring Spanish reading achievement for EP students included the SABE, LAB, Aprenda, LAS, Pre-LAS, and La Prueba. Results from 12 programs that documented posttest gains and declines are summarized in Table 6 for each grade level reported. Again, a slash between symbols on the table signifies that students at that grade level were assessed with two different tests.

Table 6. Gains in Spanish Reading Achievement by EP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
	*	* *	* * * *	*		*/+	*/+ *					
+ +	+ +	+ + + +	+ + +	+ +	+ +	+				+		
-	-	- -	-	- =	-	- =	-	=				

* significant gain + gain/maintenance - decline = significant decline

EP students demonstrated a wide range of achievement in Spanish reading. Although students made gains in most grade levels reported, there were a number of grade levels which showed a decline in scores. Statistically significant gains were made in grades 1, 2, 3, 4, 6, and 7 in eight programs. Posttest declines occurred in grades K-8 in seven programs. These declines were significant in grades 4, 6, and 8 in two programs. In one program serving students in grades 1-8, pretest results showed that students performed well on the test.

Six programs also reported results in terms of students' grade level performance. In one program, although 6th graders made gains on two different tests, they posttested below grade level on both tests. In the same program, 7th graders also made gains, but posttested below grade level on one test and above grade level on another test. Students in grades K-2, K-6, and 1-5 in three programs performed slightly below or below grade level. In a fifth program, the majority of 6th, 7th, and 8th graders scored above grade level. And in a sixth program, 3rd grade students averaged 89% in their reading and students in grades 4-5 averaged a 'B'. Students at the same grade levels from the same program performed similarly in two previous years.

In one program, 2nd graders made non-significant gains and 3rd graders made significant gains in the second year. In the third year, 2nd graders made significant gains, 3rd

graders made non-significant gains, and 4th graders showed a considerable decline in scores. In another program, 2nd graders made statistically significant gains two years in a row, while 3rd graders declined slightly in the third year.

English reading achievement

Sixteen programs reported results for English reading achievement. Fourteen presented data for LEP students and 15 reported results for EP students. One gave aggregated LEP/EP test scores. These results were presented in a variety of ways. The majority of programs documented posttest gains or declines. Other programs reported students' percentile scores, grade level performance, or a combination of these and posttest results. A few programs determined if there was an increase in the number of students scoring higher on the posttest and a few programs rated the performance of students against a comparison group. Results were presented as averages per grade level or across grade levels.

Progress of LEP students

Instruments measuring English reading achievement for LEP students included the CTBS, LAB, DRP, MAT, CAT, ITAS, 3 R's Test, ITBS, IGAP, Pre-LAS, and a district test. Results from 11 of the 15 programs that documented posttest gains and declines are summarized in Table 7 for each grade level reported. The slash between the symbols on the table signifies that students were assessed with two different tests.

Table 7. Gains in English Reading Achievement by LEP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
*	*	* * *	*	* * *		*/- *						
+	+ +	+ + +	+ + + + + -	+	+ + +		+/-	+ -		+	+	+

* significant gain + gain/maintenance - decline = significant decline

In general, across all programs in most grades, LEP students improved their English reading achievement, although in several cases, students performed below grade level. Statistically significant gains occurred in grades K, 1, 2, 3, 4, and 6 in six programs. Non-significant declines in grades 3, 4, 6, 7, and 8 were concentrated in four programs. In one program, students in grades 6 and 7 were tested with two instruments (see Table 7). Students in both grades increased their scores on one test, but their scores declined on the other test.

Five programs also reported results in terms of LEP students' grade level performance. Seventh graders in one program posttested above grade level. In another secondary program serving 6th through 12th grades, only 5-10 percent of the students scored above the 50th percentile. In one elementary program, students in grades 2 and 4 tested at or above grade level. Students in a program serving grades 1-5 scored poorly on the test although they made gains from one year to the next. In a third elementary program, students in grades 1-2 scored below grade level but performed better than a comparison group of LEP students in a TBE program. As one evaluator noted, students' initial low performance in English reading was not surprising, given the fact that they also had low Spanish reading scores.

Two programs reported findings for LEP students in terms of a comparison group. In one program mentioned above, although reading performance was below grade level, LEP

students in grades 1-2 outperformed a comparison group of LEP students in a transitional bilingual education program. In a second program, grade 1 LEP students also scored significantly higher than the comparison group of LEP students, while students in grades 2-3 scored similarly to the comparison group.

In one program, 2nd graders made statistically significant gains in years two and three, improving on previous years' performances. In another program, students in grades 1-2 in year two of the program and students in grades 2-3 in year three of the program continued to make gains.

Progress of EP students

Instruments measuring English reading achievement for EP students included the CTBS, DRP, MAT, SRA, CAT, ITBS, CAS^2, IGAP, 3 R's Test, ITAS, ITBS, Pre-LAS, and a district testing program. In some cases, students were pretested with one test, and posttested with another test. Results from 12 of the 15 programs that documented posttest gains and declines for EP students are summarized in Table 8 for each grade level reported.

Table 8. Gains in English Reading Achievement by EP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
*	* *	* * * * *	* *	*		*						
+	+ +		+	+ + + +	+ +	+				+	+	+
	-	-	- - - - =	- -	-	- -	- -	-				

* significant gain + gain/maintenance - decline = significant decline

EP students demonstrated a range of achievement in English reading. Some students showed gains in English reading achievement, in some cases significant gains. Declines in

all grades but one were not statistically significant. In many cases these students still performed at or above grade level despite the fact that only between 10 to 50 percent of their instructional time was spent in English. For example, in one program serving grades K-6, formal reading instruction in English does not begin until the 3rd grade.

Statistically significant gains occurred in grades K, 1, 2, 3, 4, and 6 in five programs. Declines occurred in grades 1, 2, 3, 4, 5, 6, 7, and 8 in eight programs. A significant decline occurred in one third grade. However, the evaluator notes that the decline may be due to conversions of the posttest scores. All other declines were not significant. In one program, the decline in posttest scores in grades 3 and 5-8 reflected a city-wide trend and students in the program performed similarly to other EP students in the city.

Seven programs also reported results in terms of students' grade level performance. Six programs indicated that students tested at or above average for the following grade levels per program: 6-7; 4, 5, 7; K-6; 1-5; 6-9; and 2, 4. Although some of these student groups showed a decline in their posttest scores, they still performed at or above grade level. Students in grades 3, 6, and 8 in one program scored below grade level (where students in 4th, 5th and 7th grade were above grade level) as did 10th graders in another program.

Two programs reported findings in terms of a comparison group for EP students. In one program, students in grades 1-2 did not make as great a gain as their comparison group of EP students from the same school. In a second program, grade 1 students scored slightly lower than their comparison group, grade 2 students scored similarly, and grade 3 students scored slightly higher.

In one program, second year results in terms of gains were more positive than the first and third years. In year one, students in grades 1 and 2 did not make any gains, but in the

second year, students in grades 1-3 made gains, statistically significant in grade 1. In year three, the scores of students in grades 1, 3 and 4 declined, while students in grade 2 made statistically significant gains. In another program 1st and 2nd graders made significant gains in years one and two, but 3rd graders showed a significant decline in year three.

Progress of LEP/EP students

One program presented aggregated data on LEP and EP student achievement in English reading. This K-8 program found that on the IGAP, given to 3rd, 6th, and 8th graders, two-way program students' scores were in most cases higher than those of comparison groups. In 1991, Grade 3 students were overall slightly above the norm (a set score), and in 1992, they were slightly below. Students in grades 6 and 8 were slightly below the norm both years.

Spanish writing achievement

Four programs reported results for Spanish writing achievement. Each of these provided data on both LEP and EP students.

Progress of LEP students

Measures used to assess student writing achievement included teacher evaluation, LAB, and locally developed tests. *In all four programs, LEP students demonstrated progress and achievement in Spanish writing.* In one program, students in grades K-1 were evaluated by teachers and demonstrated gains in their writing abilities. In another program serving grades K-3, all students met grade level objectives. For grades 1-8 in a third program, 71 percent of students overall passed the written test for their grade level. And in a high school program, 31 of 39 students in grades 9-12 (79.5 percent) passed a locally developed writing

test. In the previous year, 38.9 percent of 9th-12th graders in that program showed gains on the writing posttest.

Progress of EP students

Measures used to assess Spanish writing achievement among EP students also included teacher evaluation and locally developed tests. *EP students in three of the four programs demonstrated progress and achievement in Spanish writing.* In the first program, students in grades K-1 were evaluated by teachers and demonstrated gains in their writing abilities. In a second program serving grades K-3, all students met grade level objectives. In the high school program, five out of six students in grades 9-12 passed a locally developed test. In the previous year, 100 percent of 9th-12th graders demonstrated gains on the writing posttest. In program serving grades 1-8, only 16 percent of the EP students passed the writing test at their grade level. Students in grades 3-6 in this program did not demonstrate written mastery.

English writing achievement

Five programs reported results for English writing achievement. Three of these provided data on LEP students, two provided data on EP students, and one aggregated LEP/EP student results.

Progress of LEP students

Measures used to assess English writing achievement among LEP students included teacher evaluation, ITAS, and teacher-developed tests. *In all three programs, students at most grade levels demonstrated progress and achievement in English writing.* In one program, LEP students in grades K-1 were evaluated by teachers and demonstrated gains in their writing abilities. In another program at grades K-4 in four schools, all LEP 4th graders

passed a teacher developed test. In a high school program, 21 of 42 LEP students (51.2 percent) in grades 9-12 passed a locally developed English writing test.

Progress of EP students

Measures used to assess students writing achievement included a locally developed test and the ITAS. *In both programs, students demonstrated progress and achievement in English writing.* In a program serving grades 1-8, 67 percent of 1st graders, 100 percent of 2nd and 3rd graders, 89% of 4th graders, and 92% of 6th graders passed the writing test at their grade level. In a high school program, 100 percent of the EP students at grades 9-12 passed a locally developed test. In the previous year, 66.7 percent of the EP students in grades 9-12 showed gains on the writing posttest.

Progress of LEP/EP students

One program reported results for all students, with no LEP/EP distinction. In this elementary level program, students in grades 1 and 2 averaged 2.5 and 3.4 on a scale of 1-8 (grade level equivalents) on a county wide test. As in previous years, students in grades 3-5 in the program made gains from fall to spring and scored higher than all of the other 3rd, 4th, and 5th grade classes in the school (4th graders, for example, increased from 3.93 in the fall to 5.12 in the spring on the English writing assessment). Test scores also increased with each grade level.

Spanish math achievement

Seventeen programs provided information on Spanish math achievement. All 17 programs reported data for LEP students and 13 reported data for EP students. Programs documented results in terms of posttest gains or declines, grade level norms or percentile

performance, comparison group scores, and whether there was a greater number of individual students who improved their posttest scores. At times, programs used a combination of these measures to document student achievement. Results were presented as averages per grade level or across grade levels.

Progress of LEP students

Instruments measuring Spanish math achievement for LEP students included the SABE, PEP, TOBE, ITAS, and La Prueba. Students were also measured by teacher evaluation and course grades. Results from 13 of the 17 programs that documented posttest gains and declines are summarized in Table 9 for each grade level reported.

Table 9. Gains in Spanish Math Achievement by LEP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
	* *	* *	* *	* *	*	* *	*	*				
	*	* *	* *	*								
+ +	+ +	+ +	+ +	+ +	+ +	+ +						
	+	+ +	+ +	+ +								
-		-					-					
		=	=				=					

* significant gain + gain/maintenance - decline = significant decline

Overall, across all grade levels (K-8) and programs, students increased their Spanish math achievement, often significantly. Statistically significant gains occurred in grades 1-8 in eight programs. Non-significant declines occurred in grades K, 2, and 7 in three programs. Statistically significant declines occurred in grades 2, 3, and 7 in three programs.

Six programs also reported results in terms of students' grade level performance. In one program 6th graders posttested above grade level, while the 7th graders posttested slightly below grade level. In a second program, students in grades K-6 demonstrated average scores.

In a third program, 66 percent of K-2 students at one site scored above the 50th percentile, while in the second site, only 7 percent of K-2 students scored above the 50th percentile. Thus achievement at the first site was average to above average and at the second site it was below average. In a fourth program students in grades 1-5 scored below average overall, although 26 percent scored above average. In a fifth program, all first graders passed the course, and 59 percent of 3rd graders passed a state mathematics test. In the sixth program, students in grades 1-7 performed average on a pretest while 8th graders performed below average.

Three programs provided information on comparison group performance. Students in grades 1-2 in one program did not gain as much as their comparison group in a transitional bilingual program, but scored similarly on the posttest. However, students in grades 1-2 in another program scored significantly higher than a comparison group of LEP students. In a third program, as in two previous years, 4th and 5th graders made comparable grades to students in the non-immersion classes.

In one program that documented three years of implementation, students in grades K-2 the first year made gains which were statistically significant in grade 2. However, in the second year, students in grades 2-3 showed a non-significant decline in their scores. In the third year of the program, all students in grades 2-4 made gains. Gains in 3rd grade were significant. In another program, 2nd graders made statistically significant gains two years in a row, although 3rd graders in year three demonstrated a considerable posttest decline.

Progress of EP students

Instruments measuring Spanish math achievement for EP students included the SABE, PEP, TOBE, ITAS, and La Prueba. Students were also measured by teacher evaluation and

course grades. Results from 12 of the 14 programs that documented posttest gains and declines are summarized in Table 10 for each grade level reported.

Table 10. Gains in Spanish Math Achievement by EP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
+ + +	* * + + +	* * + + + +	* + + + + + -	* + + + + +	+ +	* + +	= 					

* significant gain + gain/maintenance - decline = significant decline

Overall, students in grades K-6 increased their Spanish math achievement as demonstrated by their posttest gains. In several cases these gains were statistically significant. Statistically significant gains occurred in grades 1, 2, 3, 4, and 6 in four programs. One program's 3rd grade experienced a non-significant decline in posttest scores and 7th graders in another program showed a statistically significant decline. In one program, as in two previous years, 4th and 5th graders made comparable grades to students in comparison classes.

Seven programs reported Spanish math achievement results in terms of percentile or grade level performance. In four of these programs, students in grades 6, K-6, 1-5, and 1 and 3 tested at or above grade level in their second language. In the last program, all grade 1 students passed the course and 90 percent of the 3rd graders passed the state math test. In one program, 7th graders tested below grade level. In a fifth program, 59 percent of K-2 students at one site and only 0-14 percent of students at another site scored at or above the 50th percentile. Eighty-eight percent of 7th graders and 75 percent of 6th graders in the sixth

program scored at or above five on La Prueba. And students in grades 1-8 in the seventh program performed very well on a pretest.

In one program, 2nd graders in the first year and 2nd and 3rd graders in the second year made statistically significant gains. In the third year, students in grades 3-4 made non-significant gains. In another program, 2nd graders made statistically significant posttest gains two years in a row, while students in grade 3 showed a slight decline in year three.

Although most evaluation reports did not specifically compare the performances of LEP and EP children, in some cases it was possible to make this comparison by looking at pre- and posttest scores. In four programs, EP students had higher posttest scores than LEP students. Specifically, in one program serving grades K-6, EP students at all grade levels pre- and posttested higher than LEP students in the same grades. In another program EP students in grades 2-5 performed at higher percentiles than their LEP counterparts, and grade 3 and 4 EP students had higher pre- and posttest scores than same grade LEP students. In a third program, EP students in grades 1-3 pre- and posttested higher than their LEP classmates. And in a fourth program, grade 3 and 4 EP students also had higher pre- and posttests than LEP students in the same grades.

English math achievement

Fourteen programs reported results for English math achievement. Ten programs provided data on LEP students, 13 provided data on EP students, and one program presented aggregated results. Programs documented results in terms of posttest gains or declines, grade level norms or percentile performance, comparison group scores, and the percent of individual students who improved their posttest scores. At times, programs used a combination of these

measures to document student achievement. Results were presented as averages per grade level or across grade levels.

Progress of LEP students

Instruments measuring English math achievement for LEP students included a district testing program, the CTBS, ITBS, CAS^2, MAT, PEP, and IGAP. Students were also measured by teacher evaluation and course grades. Results from eight programs that documented posttest gains and declines are summarized in Table 11 for each grade level reported (grades 1-7).

Table 11. Gains in English Math Achievement by LEP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
	+	* + -	+ + + + + =	* * * + +	-	- =	=					

* significant gain + gain/maintenance - decline = significant decline

LEP students demonstrated a wide range of achievement in English math. Although students made gains in grades 1-4, significant declines occurred in grades 6 and 7 and non-significant declines in grades 2, 5, and 6. In addition, while some grades scored at or above grade level, others scored below average. It should be kept in mind, however, that these results represent achievement in students' second language and that in the majority of programs, students received instruction in English for 10 to 50 percent of the time. Also, non-significant declines in most cases indicated that students maintained their skill level from pre- to posttest. Statistically significant gains occurred in grades 2 and 4 in three programs.

Seven programs recorded data in terms of grade level performance with mixed results. For example, in one program, 6th and 7th graders showed a significant decline in their posttest scores, but pre- and posttested above grade level. In one program, 86.7 percent of third graders scored above the state reference point on a state math test, whereas the year before, only 46.6 percent of the third graders scored above the state reference point. In a third program, 90 percent of 3rd graders scored above the state reference point on the same test. In a fourth program serving K-6, students in all grade levels combined scored below average, but demonstrated some growth across grade levels. In a fifth program, students in grades 1-5 scored below average to average with 3rd graders maintaining their growth rate and 4th graders significantly increasing their growth. In a sixth program, 20 percent of 7th graders, only 9 percent of 9th graders, and 0 percent of 10th graders scored at or above the 50th percentile. In a seventh program, only 25 percent of year one 3rd graders and 13 percent of year two 3rd graders scored at or above the 50th percentile.

In another program also using comparison groups, students in grades 1-2 outperformed other LEP students in a TBE program. Students in grades 2-4 in a different program had comparable grades to other classes in the school at the same grade levels.

In one program, students in grades 2 and 4 made significant posttest gains and students in grade 3 made non-significant gains in the third year of implementation, whereas in previous years students showed only slight gains and non-significant declines.

Progress of EP students

Instruments measuring English math achievement for EP students included the CTBS, ITBS, CAS^2, MAT, a district testing program, a teacher made test, SRA, PEP, ITAS, and IGAP. Students were also measured by teacher evaluation and course grades. In some cases,

students were assessed with more than one instrument. Results from 10 programs that documented posttest gains and declines are summarized in Table 12 for each grade level reported.

Table 12. Gains in English Math Achievement by EP Students

K	1	2	3	4	5	6	7	8	9	10	11	12
+	+ +	+ + + + - =	* + + + - - - - -	* + + + + + +	+ -	- - = =	- =	=				

* significant gain + gain/maintenance - decline = significant decline

EP students demonstrated a wide range of achievement in English math. Students in grades K-5 demonstrated both gains and declines, while students in grades 6-8 showed significant and non-significant declines. However, in programs that reported grade level performance, most students performed at or above average. It should be kept in mind that in the majority of programs students received instruction in English for 10 to 50 percent of the time.

Statistically significant gains occurred in grades 3 and 4 in two programs. Non-significant declines occurred in grades 2, 3, 5, 6, and 7 in five programs, with a high concentration in the third grade. However, many of these declines were slight, indicating that students maintained their level of performance. Declines in one program were also similar to a city-wide trend and students performed comparably to other EP students in the city. Significant declines occurred in grades 2, 6, 7, and 8 in three programs.

Eight programs provided data on EP students' grade level performance. In the majority of these programs students scored at or above grade level. One program reported that 8th graders performed below grade level two years in a row. Students in five programs performed at or above grade level in the following grades: 6-7; 3-8; K-6; 1-5; and 3 and 6. In one case, although 6th graders showed significant declines in their scores, they posttested almost at grade level. Seventh graders in the same program also showed significant posttest declines but posttested above grade level. Similarly, in another program, although students in grades 3-8, with the exception of grade 4, experienced declines in their posttest scores, all students posttested above grade level. In another program, students in grades K-6 scored at the 63rd percentile even though math instruction in English did not begin until 3rd grade. The evaluator notes that to some degree, students' high scores reflected their transference or application of Spanish content to English.

In one program, 50 percent of 7th graders, and only 33 percent of 10th graders scored at or above the 50th percentile. In another program, 48 percent of year one 3rd graders and 50 percent of year two 3rd graders scored at or above the 50th percentile. Third graders in another program showed a decline in scores, but all students scored above the state reference point on the state test, an improvement from the previous year where 90.0 percent scored above the state reference point. In a fourth program where 3rd graders also showed a significant decline in their posttest scores, 73 percent of them scored above the state reference point on the same state test.

Several programs also reported results in terms of comparison group scores. In one program, the comparison group made slightly greater gains than did program students in grades 1-2, although program students spent a significant portion of their day in Spanish. In

another program, as in previous years, students in grades 2-5 had comparable grades to other 2-5 classes at the same school.

One program that documented three years of implementation reported that in year one, 1st graders made gains while 2nd graders showed declines. In year two, 1st graders made significant gains, 2nd graders made non-significant gains, and 3rd graders showed significant declines. In year three, 2nd and 4th graders made gains whereas 3rd graders showed slight declines.

Progress of LEP/EP students

One program reported results for all students, with no LEP/EP distinction. In this K-8 program, students in grades 3, 6 and 8 were given a norm-referenced test of English math achievement. Students at all three grade levels scored higher than comparison groups for both evaluation years reported. Third graders both years scored well above the norm. Sixth graders scored below the norm one year and just above the norm the next year. Eighth graders scored below the norm both years.

Spanish science

Three programs reported Spanish science results for LEP and EP students. In one program LEP and EP students in grades K-1 were evaluated by teachers and made improvements in the subject content. In another elementary program, all students in grades 1-5 made progress and, as in previous years, had grades that were comparable to students in other classes at the same school. In a middle school program the percent of LEP and EP students in 6th and 7th grades who achieved a grade of 'C' or higher increased from one year to the next.

Spanish social studies

Three programs reported Spanish social studies results for LEP and EP students. In one program LEP and EP students in grades K-1 were evaluated by teachers and made improvements in the subject content. In another elementary program, all students in grades 1-3 made progress and, as in previous years, had grades that were comparable to students in other classes at the same school. In a middle school program the percent of LEP and EP students in 6th and 7th grades who achieved a grade of 'C' or higher increased from one year to the next.

English science

Two programs reported English science results for LEP and EP students. In one program LEP and EP students in grades K-1 were evaluated by teachers and made improvements in the subject content. A second program reported that the percent of LEP and EP students in 6th and 7th grades who achieved a grade of 'C' or higher increased from one year to the next.

English social studies

Three programs reported English social studies results for LEP and EP students. In one program LEP and EP students in grades K-1 were evaluated by teachers and made improvements in the subject content. In a second elementary program, all students in grades 4-5 made progress and, as in previous years, had grades that were comparable to students in other classes at the same school. A middle school program reported that the percent of LEP

and EP students in 6th and 7th grades who achieved a grade of 'C' or higher increased from one year to the next.

Additional content area results

This section presents results on student performance in content areas where the language of instruction or assessment was not specified. Although in some cases, subject matter was not specified, the majority of programs provided information on mathematics, science, and/or social studies. Thirteen programs provided information included in this section. Three reported data for LEP students, four discussed EP students, and nine presented aggregated LEP/EP student outcomes. Measurements included final course grades and teacher developed tests. One program measured conceptual development with the Boehm test, and achievement with the IOWA. Another program used the COGAT to measure cognitive development and a district test to measure reading, writing, and math. Several programs reported results in terms of the percent of students at particular grade levels who received a grade of 'C' or higher. Other programs reported students' performance in relation to comparison groups and gains and/or scores from achievement tests.

Progress of LEP and EP students in math, science, and social studies

The following tables (Table 13, 14, and 15) show the percent of students from five programs who achieved a passing grade in math, science, and social studies for each grade level reported. Percentages were rounded for the purpose of the table to fit increments of ten. (For example, percentages that ranged from 60 percent to 69.9 percent would fall in the 60 percent box.) Check marks (√) represent LEP students and X marks (X) represent EP students. Grades 5-8 are not listed in the tables since no information was available for those

Table 13. Percent of LEP (√) and EP (X) Students Attaining a Passing Grade in Math

	50%	60%	70%	80%	90%	100%
K	√√ X		X			
1		√	√	X	√	X X
2		√	√		√ X X	X
3	√			√ X	√ X	X
4				√		X
9-12		√ X				

Table 14. Percent of LEP (√) and EP (X) Students Attaining a Passing Grade in Science

	50%	60%	70%	80%	90%	100%
K		√		X		
1		√			√ √	√ X X X X
2	√				√ X	√√ X X X
3				√ X	√√ X	√ X X
4					√	√ X X
9-12			√ X			

Table 15. Percent of LEP (√) and EP (X) Students Attaining a Passing Grade in Social Studies

	50%	60%	70%	80%	90%	100%
K		√		X		
1		√			√ √	√ X X X X
2		√	X		√ √ X	√ X X
3			√		√ √ X X	√ X X
4					√	√ X X
9-12				√ X		

grades. Grades 9-12 are presented on a single line since results from that program were not broken down by grade level.

In every case, at least 50 percent of the students achieved passing grades. Higher percentages of students passed science and social studies than math. The percent of EP students who achieved passing grades in all three subjects tended to be higher than for LEP students.

Some programs had content area data for more than one year. In a secondary program, a higher percentage of students in grades 9-12 achieved a 'C' or better in social studies and science in year three than in year two, but the percent of students receiving a 'C' or better in math declined slightly. In an elementary program, the percent of students in K-3 that passed social studies and science decreased over three years. The same program reported that in grades K-1, the percent of LEP students that passed math also decreased over three years; a higher number of 2nd grade LEP students in year two than in year one passed math, but this rate declined in year three, whereas a greater percentage of 3rd graders passed math in year three than in year two. The percent of EP students in the same program that passed social studies, science, and math remained consistent over the three years with the exception that the percent of kindergartners that passed the three subjects declined in year three and a higher percent of 3rd graders passed math in year three than in year two. In another elementary program, the percent of LEP students that passed social studies, science, and math declined from one year to the next; the percent of EP 1st graders that passed math declined in year two; and the percent of EP 2nd graders that passed all three subjects also declined in year two.

Progress of LEP and EP students in other content areas

Several programs did not report progress in terms of the percent of students attaining passing grades. In one program, all K-1 students made gains in content areas evidenced by their grade promotion. A program serving K-8 also stated that out of 392 students, 388 were promoted to the next grade level. Another evaluation report determined that LEP and EP students in grades 1-2 were making solid academic progress.

Fourth grade students in another program (LEP and EP combined) who were administered the ITBS performed at 5th and 6th grade levels in all areas as did 4th graders in the previous year. They also scored above the 65th percentile in all areas of the test compared to a national sample, and increased the percentile performance over 4th graders in the two preceding years. Furthermore, as in the year before, the 4th grade class scored higher in all of the subtests than other 4th grade classes at the school. EP students in this program scored higher than LEP students, but LEP students scored higher in language arts and math than the state means. This program also reported that 1st graders' conceptual development as measured by the English and Spanish version of the Boehm test, increased from fall to spring. On the English version, students scored 86 percent in the fall and 94 percent in the spring and performed better than other 1st grade classes in the school. On the Spanish version, students scored 78 percent in the fall and 86 percent in the spring. First grade fall scores were higher than the previous year's, most likely due to the fact that a kindergarten class had been added to the program, so students had more preparation in Spanish prior to the first grade.

Another program reported that EP students in grades 1-2 that had a half of year of bilingual instruction scored comparably to those who had not, indicating that their academic progress was not impeded by dual language instruction. Similarly, 1st graders in another

program scored at the same level or higher on the COGAT than the other 1st grade classes in the school. In this same program, 1st graders also performed well on the reading, writing, and math tests, with several students performing above average in math. In a pre-kindergarten class in another program, LEP and EP students progressed in their social, cognitive, and academic development.

One report noted that students who received free lunch and who were from a low socioeconomic background scored lower on academic achievement measures than students who were not on the free lunch program.

Self perception and language/cross-cultural attitudes

Six programs reported data on LEP and EP students cross-cultural attitudes, language attitudes and self-perception. Measurements included a questionnaire, observation, and the Self Perception Profile. Programs assessed students' rating of the program, their attitude toward others, and their perception of themselves.

One elementary program administered a questionnaire, on which students gave positive ratings to the program. Two other programs, one elementary and one high school, stated that the integration of LEP and EP students facilitated friendships across groups. Furthermore, another report stated that the inclusion of EP students in the bilingual program improved the perception of the program and the Spanish language and minimized prejudice of both EP and LEP students toward each other.

Three programs indicated that students had increased or high levels of self-esteem and academic confidence. In the two programs where the Self Perception Profile was administered, LEP and EP students in grades K-6 and 6-12 scored above the midpoint for

academic competence, social competence, physical appearance, self-esteem, and motivation. These students also had high scores on cross-cultural attitudes and for motivation to learn a second language to meet others and for academic gain.

Staff development

Staff development was an important component of the two-way bilingual programs reviewed and was treated as an evaluation item in a majority of the reports. Programs were generally evaluated on the degree to which they instituted training activities and the participation of staff members in these activities.

Twenty-three programs provided information on staff development activities. Those activities are listed in Table 16, a compilation of the kinds of staff development activities that were reported for various programs. Since the meaning of terms varies from program to program, some categories may overlap. Check marks (√) indicate the number of programs that reported engaging in a particular activity.

Training topics included English as a Second Language (ESL), Spanish as a Second Language (SSL), needs of LEP and EP children, dual language curriculum, multicultural education, elementary education theory and practice, cooperative learning, language acquisition research, two-way bilingual education methodology, theory and goals, interdisciplinary education, computer technology, and reader response and writing process methods. Topics for graduate level and credit courses included bilingual education, immersion methods, and computers. Staff also attended conferences on foreign language and bilingual education.

Table 16. Staff Development Activities Reported

Staff development activity	Number of programs
workshops	✓✓✓✓✓✓✓✓✓✓✓✓
monthly workshops	✓✓
meetings	✓✓✓✓✓✓✓
bi-monthly meetings	✓
monthly meetings	✓✓
orientation meetings	✓
instructional meetings	✓
graduate level courses and credit classes	✓✓✓✓
in-service training	✓✓✓✓✓✓
monthly in-service training	✓✓
pre-service training	✓✓✓✓
seminars	✓
literacy institute	✓
English language development institute	✓
curriculum/materials development	✓✓✓
ongoing formal and informal training	✓✓
site visits to other two-way bilingual programs	✓✓✓✓✓
Spanish for Spanish speakers	✓
planning sessions	✓
paraprofessional training	✓✓
attendance at conferences	✓✓✓✓✓✓✓✓✓
Spanish study in foreign countries	✓✓
parent conferences	✓
staff retreat	✓
management meetings	✓
demonstration lessons	✓

In addition to the documentation of training and development activities, four programs determined the level of staff satisfaction with the training or program as a whole. In two programs, staff members gave positive ratings to the two-way program. In two programs, teachers and staff highly rated the training and development activities and efforts. In one program, however, teachers wanted more information on other programs and schools.

Parent involvement

Parent participation was also an important component of two-way bilingual programs and was treated as an evaluation item in a majority of the reports. Programs were generally evaluated on the degree to which they involved parents in various school-related and parent learning activities.

Twenty-four programs provided information on parent involvement. Most reports described or listed various program activities. Table 17 compiles the activities mentioned in the reports, to provide an overall picture of the kinds of parent involvement activities that were implemented in the various programs. Since the meaning of terms varies program to program, some categories may overlap. Check marks (√) indicate the number of programs that participated in a particular activity.

One program's goal was to have 75 percent of the parents participate in activities. However, 60 percent participated in activities, 55 percent attended the multicultural program, and 15 percent attended GED and/or ESL/SSL classes.

In addition to the documentation of parent participation, six programs determined the level of parent satisfaction with the two-way bilingual program as a whole and activities specifically designed for parents. Four programs reported that parents were highly satisfied

Table 17. Parent Involvement Activities Reported

Parent involvement activities	Number of programs
workshops	✓✓✓✓✓✓✓✓✓✓✓
parent leadership project/institute	✓✓✓
GED classes	✓✓✓
ESL classes	✓✓✓✓✓✓✓
SSL classes	✓✓✓✓✓
multicultural programs and activities	✓✓✓
president's council meeting	✓
parent/staff meetings	✓✓
parent/teacher conferences	✓
field trips	✓✓✓✓✓
parent's club	✓
meetings	✓✓✓✓✓✓✓✓
school site council/local school council	✓✓✓
parent volunteers	✓✓✓✓
parent advisory council/committee	✓✓✓✓✓
district advisory council meetings	✓
school visitations	✓
luncheon for parents/banquet/celebrations	✓✓✓
PTA meetings	✓✓
parent feedback nights	✓
orientation	✓
special assemblies	✓✓✓✓
attendance at conferences	✓✓✓
mentoring activities	✓
bilingual advisory committee	✓✓✓✓✓✓
back-to-school night	✓✓
misc. activities	✓✓✓✓✓
proposal development/recommendations	✓✓✓

with the program and parent activities. In another program, parents indicated they were pleased their child was learning two languages and making good academic progress. Two programs also indicated that parents gained knowledge of and understood the goals of the program.

One report described extensive parent involvement, in that parents submitted the original proposal, participated in staff selection, and acted as language and culture consultants. Another program also indicated that parents participated in the development and implementation of the program.

In another program, newsletters were regularly sent to parents. In addition, the school has an electronic answering service that provides information about homework and class activities to parents.

Teaching methodologies and classroom strategies

Fifteen programs provided information on the kinds of teaching methodologies and classroom strategies that were used in two-way bilingual education programs. Table 18 summarizes this information, providing an overall picture of the different techniques that were utilized. The majority of programs employed cooperative learning and whole language approaches. Thirteen programs reported they used cooperative learning, 11 programs used a whole language approach, and six programs used the natural approach as a basis for language learning and teaching.

Table 18. Instructional Strategies Reported

Teaching methodologies & strategies	Number of programs
cooperative learning	✓✓✓✓✓✓✓✓✓✓✓✓
whole language	✓✓✓✓✓✓✓✓✓✓
natural approach	✓✓✓✓✓✓
reciprocal interaction model	✓✓✓✓
sheltered instruction	✓✓✓✓✓
manipulatives	✓✓
computer technology	✓✓✓
thematic approach/units	✓
peer tutoring	✓
conflict resolution	✓✓
educational equity	✓
authentic assessment	✓
critical thinking	✓
small group instruction	✓✓
integrated language and content	✓✓✓
writing process	✓
multicultural instruction	✓
interdisciplinary language arts	✓

Conclusion

Overall, the findings of the evaluations of two-way programs are positive. Where comparisons are possible, students are on the whole doing as well as or better than their fellow students in other programs. Moreover, they are developing Spanish language skills far beyond those of other students, either as a first or second language, and they are working side-by-side with speakers of languages other than their own, an opportunity that is less likely to be offered to students in other programs.

There are some reasons for exercising caution in interpreting these evaluation results, however. Several reasons were stated in the early sections, concerning aggregating these data: programs varied considerably in their implementation of two-way bilingual education, as well as in what data were collected and how they were reported. In considering Spanish language proficiency, for example, we received reports from programs with 50% to 90% of instruction in Spanish, with measurements of proficiency on numerous different tests, and with myriad other variations in implementation and measurement involved.

Furthermore, it is important to remember that many of these programs are relatively new. One evaluator pointed out that many programs "have not been in operation long enough for 'program outcomes' to be detected. Some of the districts, Title VII and otherwise, might have been operating two-way programs long enough for outcomes to be meaningfully assessed. However, many programs ... are developing curricula, developing materials, developing teachers' capabilities, and developing community awareness of two-way bilingual education." (Hargett, personal communication) This report includes a mixture of older and newer programs.

Another cross-cutting factor relates to the process of language development. Research has shown that language learning is a long-term process and second language proficiency may take five to seven years to develop (see Collier 1992), particularly when academic repertoires are involved. As a result, short-term outcomes may not reflect the full potential of dual language programs. Students in the first year or two of a two-way program may not demonstrate mastery of all grade-level skills in both languages. Since some programs admit new students at each grade level, newcomers may be included in the evaluation data for every grade. Thus, results in the early years may reflect the fact that most students are in early stages of second language development. Results from higher grades may include numbers of students who have not had the benefit of a two-way program in earlier years; they may not be at the same level of second language development and they may have a less strong educational background overall.

A further word can be said about the use of the pre-/posttest design. Many of the evaluations report data in this format, reflecting the question "Did this program make a difference in the year being evaluated?" The results show that most of the programs do make a positive difference. However, they are less helpful in showing us how well the students are doing. For example, we find instances where a decline occurred between pre- and posttest, but it turns out that the students at both times were performing well above grade level. In other cases, a significant gain is shown, but the students remain below grade level. Both examples beg for more explanation, but that was not possible within the scope of this review (the reports themselves often give additional comments, some of which have been included).

Despite these cautions, however, positive trends emerge. LEP students maintained or increased their Spanish language proficiency and increased their English language proficiency.

EP students also maintained or increased their English proficiency and increased their proficiency in Spanish. LEP students made progress in English and Spanish reading, although in several cases students performed below grade level. EP students demonstrated a range of achievement levels in both English and Spanish reading with a number of gains and declines in posttest scores. In English reading, however, many grades performed above grade level. In Spanish math, LEP students increased their achievement levels, and in several cases performed at or above grade level. In English math, LEP students exhibited both gains and declines in their posttest scores with some students scoring at or above grade level and others scoring below. EP students increased their achievement in Spanish math. In English math, EP students showed posttest gains and declines, but a number of grade levels scored at or above grade level.

The majority of programs also had a very strong staff development and parent involvement component and carried out a wide range of activities to train staff members and increase parent participation.

In sum, this review of evaluations points to two-way bilingual education as an approach in its early stages of development and showing great promise. Some programs are well-established and are demonstrating high levels of success and strong student outcomes. Others are newer, but are already indicating that students achieve well. There are areas for improvement, as noted in the recommendations contained in many of the reports. However, the evaluations suggest that, by and large, the two-way bilingual programs reviewed are making good progress toward the goals of bilingualism, academic achievement, and positive cross-cultural attitudes for their students.

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